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The Value of Nature and Education in Nature in Light of Student's Integral Development

Wartość przyrody i edukacja w środowisku naturalnym
w kontekście integralnego rozwoju ucznia

KEYWORDS ABSTRACT

the value of nature,
education in the
natural environment,
nature based
education, integral
development,
didactic innovations

The article aims to demonstrate the opportunities for a learner's integral development through the valuation of nature and natural education. The research question addressed here is: in what ways are the opportunities for stimulating a learner's integral development expressed through education in the natural environment and, thereby, through the actualization of the value of nature? The methodology was grounded in analytical-synthetic method, which relies on critical analysis and synthesis of relevant scholarly literature. The starting point of the conducted analyses is a review of selected definitions of the concept of nature. Within this analysis, Stanisław Zięba's definition of nature was adopted and the notion of the value of nature was conceptualised.

The specific objective of the subsequent stage of the study was to demonstrate the significance of nature for the development of particular dimensions of student's life and functioning. The theoretical foundation of the analyses is provided by Stefan Kunowski's concept of integral development, referred to as the stratified conception of development and education. The significance of the value of nature within individual developmental layers was examined and presented. The last part of the article proposes guidelines for teachers, encouraging them to undertake educational activities within the natural environment while taking into account the stages of the educational process oriented toward the realization of the value of nature.

The final element of the conducted research is the presentation of the educational opportunities offered by education within the natural environment, with particular emphasis on the pedagogical integration of rural and urban environments, as well as on the implementation of didactic innovations.

SŁOWA KLUCZE ABSTRAKT

wartość natury,
edukacja
w środowisku
naturalnym,
edukacja
przyrodnicza,
rozwój integralny,
innowacje
dydaktyczne

Celem artykułu jest ukazanie możliwości stymulowania integralnego rozwoju ucznia poprzez wartościowanie przyrody i edukację przyrodniczą. Problemem badawczym, jaki tu postawiono, jest pytanie: w jaki sposób możliwości stymulowania integralnego rozwoju ucznia wyrażają się poprzez edukację w środowisku przyrodniczym, a tym samym poprzez aktualizację wartości przyrody? Metodologię osadzono w metodzie analityczno-syntetycznej, która opiera się na krytycznej analizie i syntezie literatury przedmiotu. Punktem wyjścia przeprowadzonych analiz jest przegląd wybranych definicji pojęcia przyrody. W ramach tej analizy przyjęto definicję przyrody Stanisława Zięby i skonceptualizowano pojęcie wartości przyrody. Szczegółowym celem kolejnego etapu analiz było wykazanie znaczenia przyrody dla rozwoju poszczególnych wymiarów życia i funkcjonowania ucznia. Podstawę teoretyczną analiz stanowi koncepcja rozwoju integralnego Stefana Kunowskiego, zwana warstwową koncepcją rozwoju i edukacji. Zbadano i przedstawiono znaczenie wartości przyrody w poszczególnych warstwach rozwojowych. W ostatniej części artykułu zaproponowano wskazówki dla nauczycieli, zachęcające ich do podejmowania działań edukacyjnych w środowisku przyrodniczym, z uwzględnieniem etapów procesu edukacyjnego ukierunkowanego na uświadomienie wartości przyrody. Kończącym elementem przeprowadzonych analiz jest prezentacja możliwości edukacyjnych, jakie oferuje edukacja w środowisku przyrodniczym, ze szczególnym uwzględnieniem integracji pedagogicznej środowiska wiejskiego i miejskiego oraz wdrażania innowacji dydaktycznych.

The Definitional Approach to the Concept of Nature

The scholarly literature provides multiple definitions of “nature.” In its most general sense, nature is the totality of things and phenomena in the universe that arise spontaneously – that is, without human intervention. Nature, or *natura*, encompasses the plant and animal worlds, as well as the areas in which these environments exist (Dunaj, 2001, p. 204).

In a narrower sense, nature is also frequently described as the “natural environment”. Ewa Nowicka defines the natural environment as

[...] a complex of interrelated phenomena. This complex includes territorial features, that is, landforms (mountains, plains, plateaus) and mineral resources, which can generally be described as geomorphological features; climate, which is influenced by latitude determining solar radiation, humidity, temperature in daily and annual distributions, as well as precipitation, also in daily and annual distributions; and the stock of living organisms, that is, flora and fauna, along with their seasonal variability (Nowicka, 2005, p. 289).

Nowicka also emphasizes the interdependent relationships among individual elements: “Flora depends on soil type and climate; fauna is likewise dependent on these factors, as well as on the flora present in a given area” (Nowicka, 2005, p. 289).

In the *Encyclopedia of Pedagogical Axiology*, Stanisław Zięba defines nature as

[...] the totality of interactive components constructing the ecosphere; specific systems (in terms of organization) for which relations, interactions and interdependencies among elements forming systemic configurations are essential; a set of relationships among phenomena on Earth; processes, chemical forces, and organic and inorganic structures governed by the laws of nature; in physics, a synonym for the physical world; a synonym for the properties of matter and energy; in biology, the totality of biotic objects; in everyday language, the external world – water, air, land with plants and animals; a reality encompassing biotic and abiotic objects (a constellation of animate and inanimate matter in a certain state of order) (Zięba, 2016, p. 916).

This illustrates a holistic and multidimensional approach to the concept of nature, highlighting both the internal structure of its elements and the interrelationships among them. Building on Stanisław Zięba's definition of nature, as well as the definition of value proposed by the present author and developed in numerous publications – as that which is valuable and worthy of human beings, contributing to their integral development and fullness of humanity – the value of nature is understood as an inherent worth embedded in its integrated structure and the external world, including water, air, soil, plants, and animals.

Nature as a Factor in the Integral Development of the Student

Stefan Kunowski distinguishes the following layers: the biological, psychological (cognitive), social, cultural, and worldview-related layers (Kunowski, 2004, p. 197). Alina Rynio defines integral development as “a full, comprehensive, and balanced

sequence of structural and functional changes, dependent on internal and external factors, leading toward higher, more complete and more perfected states of the person and society” (Rynio, 2016, p. 448). In another work, Rynio defines integral development according to its educational and formative dimensions. For this study, according to A. Rynio, integral development is defined as “the holistic external and internal development of the human being and adaptation to life according to an accepted model” (Rynio, 2004, p. 13), that is, the fullness of humanity. It consists of the coordination and harmony of the physical, psychological, social, spiritual, and religious spheres in a life project oriented toward the fullness of human individuality. An indicator of development understood in this way is the coherence of thought, word, and action, rooted in personal good and integrally connected with the common good (Chałas, 2007, p. 11).

Integral development encompasses the whole human being – that is, all layers of human life and functioning. This raises a fundamental question: how is nature expressed in the development of the individual layers of human life and functioning? The point of departure for recognizing nature as a developmental factor in a holistic perspective is acknowledging its value. This requires the interiorization of this value, that is, the internal assimilation of the experience of nature’s beauty, the establishment of spiritual relationships with it, the expression of wonder and admiration, and the conviction of nature’s great, timeless significance to human life on Earth. This is followed by internalization, expressed in the adoption of standards of behaviour toward the value of nature, their recognition as one’s own, and acting in a socially approved manner (Lebuda, 2016, p. 453).

The following sections present opportunities for the development of individual layers of human life and functioning – biological, psychological, social, cultural, and worldview-related – through a child’s positive orientation toward nature.

Nature influences the development of the biological layer. Experiencing nature in an active manner, through gardening activities and plant care, for example, constitutes a factor in the development of manual skills and the strengthening of a child’s physical capacities. An aesthetically pleasing natural environment surrounding the home and school, as well as within these spaces, reduces nervous tension, anxiety, arousal, and stress. Nature inherently possesses the power to “call” individuals toward an active lifestyle, including rest, physical exercise, and movement in open natural spaces, thereby contributing to disease prevention.

Attention should also be paid to the therapeutic potential of nature. Education conducted in a natural environment constitutes a source of rich sensory experience, such as taste, hearing, touch, proprioception, perception of changes in temperature and humidity, and the experience of open, unrestricted space. Nature broadens the range of sensory experiences, supports healing processes, and enhances the effectiveness of

therapeutic interventions, including horticultural therapy and sensory integration therapy (Szewczyk-Taranek, 2024, p. 170).

In sum, the significance of nature for the development of the biological layer lies in both its health-promoting and preventive functions. Its importance is increasingly recognized and disseminated across various countries in Europe and the Americas, as evidenced by the development of concepts such as sensory, health-promoting, and therapeutic gardens (Winterbottom & Wagenfeld, 2015). Horticultural therapy has also found a place in the curricula of pedagogy programs in Poland.

Nature also constitutes a factor in the development of the **psychological/cognitive layer**. The richness of sensory experiences enhances a child's concentration, creativity, vitality, and motivation for cognitive activity. As a source of knowledge, nature embodies the power to "call" one to know it and to explore its mysteries. When a child undertakes this, nature fosters concentration, attention, memory development, conceptual and concrete–imagistic thinking, and imagination, thus contributing to the development of cognitive abilities. Nature acts as a motivator for cognitive activity. To fully utilize this potential within the educational process, it is necessary to integrate four pathways of teaching and learning: learning through assimilation, discovery, experience, and practical action (Okoń, 1987, pp. 194–198). At the center of this didactic integration should be the pathway of discovering knowledge about nature.

It should be emphasized that nature provides a unique opportunity to stimulate all of the senses. However, the teacher must ensure that children's experiences of nature are active in character, involving experimental and research-oriented activities, as well as care- and protection-oriented actions within an ecological perspective. Only then does nature become a significant factor in the learner's cognitive development. The integration of a child's experience of the natural environment with the didactic process enriches the range of cognitive, social, and spiritual experiences, sensitizing the child to stimuli from the natural world and motivating the search for, and awareness of, new sensory experiences. In this way, it supports a child's attainment of greater autonomy and subjectivity.

Nature also constitutes a factor in the development of the **social layer**. Scientific research and World Health Organization statistics demonstrate that nature significantly influences social life, manifested in the integration of individuals around the value of nature (Souter-Brown, 2014). It is a factor of social integration in cultural, normative, functional, and communicative dimensions (Lis & Lis, 2016, pp. 435–440). Recognizing the value of nature by members of a school community helps to integrate the community and, in turn, inspire it to integrate into the larger local community. The realization of this value through its exploration and understanding builds the culture of both the school and the broader community. It serves to shape human attitudes and behaviors, deepen knowledge about nature, and foster engagement with

issues related to its respect and development, in addition to undertaking effective actions in this area. The dynamic transformation of these attitudes and behaviors within a pro-ecological perspective contributes to the development of an internal culture; as this culture grows, cultural integration emerges, manifested, among other things, in becoming someone *for others* and *with others*, someone who prefers and actualizes the value of nature within a developmental perspective.

The identification of members of the school community with the value of culture plays a role in the development of their personalities, manifested in adherence to ethical and moral norms, the formation of habits, and the imitation of authorities who incorporate nature into their own lives and value systems. In this way, nature serves as a factor of normative integration among members of the school community. The higher the level of such integration, the more consistently students act in accordance with the system of norms and values oriented toward respect for and the development of nature that has been shaped within their personalities.

The value of nature also constitutes a factor of functional integration, expressed in the optimization of the organization of tasks undertaken. The type of these tasks includes cognitive tasks related to nature, such as exploring its mysteries and understanding the requirements for its development, tasks connected with nature's care (care-related activities), and tasks aimed at the protection of nature and the provision of conditions for its development (axiological tasks). The implementation of these tasks requires the search for effective forms of organization and management.

Closely linked to the above-mentioned categories and forms of social integration, through the internalization and interiorization of the value of nature by members of the school community, especially students, is *communicative integration*. Understanding nature's value and actualization through the development of one's attitude toward nature, both in the perspective of personal development and the development of nature itself, takes place through various forms of communication: conversation, dialogue, and discussion. Without such communication, neither the initiation nor integration of actions aimed at realizing the value of nature and the goals associated with nature education can occur. In this process of social integration, the child/student plays an active role. The student is both a recipient and a creative subject oriented toward the multidimensional experience of nature.

Nature also constitutes a factor in the development of the cultural layer of the child/student. Visual aspects related to the colors, shapes, and patterns of leaves and flowers fascinate and inspire creative activity in the visual arts, literature, poetry, and theater. The teacher's essential task is to support the continuous discovery of nature's beauty and its expression through various forms of artistic activity. Plants offer a rich palette of colors that changes with the seasons. This dynamic captures attention and

fosters creative imagination, which finds expression in various forms of artistic activity, including visual, literary, and theatrical.

Nature constitutes a factor in the development of the **worldview layer**. A child's or student's immersion in a natural environment, together with the recognition of its immense value, constitutes for them a kind of sanctuary. In this space, an appreciation for the miracle of creation arises. Within the natural environment, a sense of happiness and fulfillment emerges; feelings of wonder, appreciation for nature, and unconditional gratitude toward the Creator are evoked.

The aforementioned values of nature in a child's integral development should be utilized in education, as they justify engaging in learning within natural spaces. Education in an open natural environment can take the form of a gardening area. In rural schools, it may include the local community where the school operates, as well as surrounding villages where children reside. In urban schools, it could involve a designated area, such as a nature garden. A second form could be a set route – a trail through a forest, field, or park designed to provide rich sensory experiences and spatial orientation. A third solution is the sensory enrichment of the natural environment (Szewczyk-Taranek, 2024, pp. 163–164).

One question for teachers working in large and small urban environments is: what methodological, organizational, and technical measures should be undertaken to provide children with opportunities for nature education? The answer, in a programmatic and methodological sense, is to develop an original pedagogical program for nature education and to implement project-based learning methods. Original programs must have a dual educational and formative character. This requires the integration of education aimed at realizing the value of nature with value-oriented (axiological) education focused on nature. Key components of such a nature-based education include:

- Teachers' understanding of nature's value within the hierarchy of values preferred and realized by children;
- Supporting students in understanding the essence and function of nature in human life;
- Assisting students in recognizing the need to respect, protect, and engage in developmentally positive actions toward nature;
- Motivating students to explore, respect, protect, and develop nature;
- Supporting student learning about preserving and developing nature;
- Assisting students in the proper valuation of actions for the preservation and development of nature;
- Inspiring students to participate in community-based activities to acknowledge nature as a great value, respect it, protect it, and contribute to its development;
- Supporting students in their participatory and community-oriented initiatives.

Implementing these components into the formative educational process establishes nature as a great value – one that must be known, respected, protected, and developed (Chałas, 2007, pp. 279–280).

Unrealized Opportunities in Nature-Based Education

The environmental context in which a school operates significantly shapes the possibilities for education in natural spaces. In this respect, particular attention should be given to schools in rural areas and large urban centers.

A rural child lives and breathes nature, with direct access to its knowledge and beauty. No child living in a large city has as great an opportunity for education in natural environments as a rural one. This raises the question: is this opportunity being utilized? Survey research, including interviews with teachers, graduates of rural schools, and representatives of educational institutions, indicates that in many rural schools these opportunities remain largely unexploited. Children do not conduct large-scale, nature-based research; their creative activity rooted in nature is not nurtured; and project-based initiatives aimed at developing green spaces around homes are rarely implemented. This highlights the need to guide teachers working in rural environments on how to capitalize on these natural conditions for nature-based education.

In the context of education in natural spaces, from the perspective of a child's integral development, project-based learning of various types is noteworthy:

- research projects
- artistic projects
- literary projects

Possible topics include:

- *State of nature in the local environment* – research project
- *Threats to local nature and their consequences* – research project
- *My pro-ecological actions* – individual practical project
- *The pro-ecological actions of our class* – group practical project
- *The beauty of nature – creativity as affirmation of nature's value:*
 - artistic project (competition format)
 - literary project (competition format) for stories or poems
 - practical handicraft project (competition format)
 - *Exploring the secrets of nature* – research project
 - *The most beautiful home garden* – artistic/practical project
 - *Nature as God's gift* – knowledge-based project

The use of project-based learning becomes a factor in developing all layers of a child's life and functioning, including:

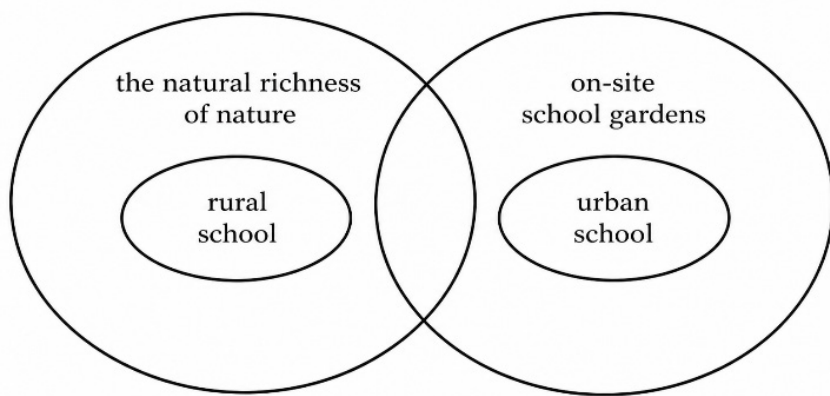
- Biological layer – practical projects
- Cognitive layer – research and knowledge-based projects
- Social layer – group projects
- Cultural layer – projects involving creative work
- Worldview layer – anthropologically oriented research projects

It should be emphasized that didactic tasks conducted in natural spaces, especially in the form of group or collective projects, serve to build social bonds and harness developmental potential, while also facilitating the acquisition of new cognitive competencies and practical skills, as well as fostering joy and contemplation in the creative work.

Nature-based education, or education in natural spaces in schools located in large cities, requires measures that complement the implementation of projects. One such measure is the design and establishment of a nature garden on the school grounds, provided conditions allow. If such conditions are unavailable, securing an external site for an educational garden is recommended. Another solution is to collaborate with a rural school to create a center for nature education.

This approach offers numerous benefits, such as the opportunity to form student communities with deepened interests in nature, as well as teacher communities seeking innovative methods and forms of nature-based education. It also allows children from urban areas to gain insight into rural identity, including the cultural identity of rural children and the village as a socio-cultural environment. A particular advantage is the possibility of holistic experiences of nature, encompassing its health-promoting, cognitive, preventive, social, and spiritual functions. This opportunity should be leveraged, especially by schools operating in large urban centers, although rural schools can also gain considerable benefits from such cooperation. The nature and structure of this collaboration can be illustrated schematically.

Figure 1. *Nature-Based Education in Schools Operating in Rural and Urban Environments*



Summary

The value of nature is apparent across multiple dimensions of life and health. Nature integrated into architecture, particularly in the surroundings of residential buildings in large cities, serves to shape social and psychological traits. Its beauty functions as a catalyst for the development of culture.

Bożena Szewczyk-Taranek emphasizes that nature in the workplace “improves creativity and work efficiency, optimizes brain function and energy, and enhances motivation to work. A beautiful environment stimulates, reduces nervous tension, anxiety, arousal, and stress” (Szewczyk-Taranek, 2024, p. 152).

Nature fulfils important functions in human life, including:

- educational
- cognitive
- therapeutic
- integrative (at both individual and social levels)
- inspirational (for creative activity, including visual arts, literature, etc.)

The multi-functionality and multi-dimensionality of nature obliges educators to implement education in natural spaces. Education in a natural environment stimulates the senses and facilitates a deeper, multifaceted understanding of nature, particularly through active engagement that is both cognitive and practical.

A critical consideration is the choice of methods and forms of nature-based education. Notable approaches include lessons conducted in natural spaces, workshops, and nature camps. In all cases, attention must be paid to the holistic use of nature in the child's development. There is also an urgent need to train future teachers and to develop the skills of current educators in designing and implementing nature-based educational concepts. This requires creating suitable conditions through the use of activating methods, including project-based learning, and organizational forms such as camps, workshops, and debates. Also essential is a deepening knowledge of horticultural therapy, which has found its place in school education and teacher training programs across Europe, the Americas, and Poland.

In the context of student education, the elective course "Horticultural Therapy as a Method Supporting the Education of Children with Special Needs" deserves attention. This course has been implemented for students of preschool and early school pedagogy at the John Paul II Catholic University of Lublin, under the guidance of Dr. Katarzyna Karczmarz. The course aims to prepare students for the conscious and responsible use of horticultural therapy elements in educational practice. This goal is achieved through acquiring skills in planning and conducting horticultural therapy activities, and in reflectively integrating theory with practice, including evaluating outcomes (Karczmarz, n.d.).

Such initiatives should be introduced and enhanced in universities educating future teachers in order to ensure that the benefits of nature and horticultural therapy are systematically integrated into teacher training and educational practice. The study constitutes an attempt to present a holistic approach to environmental education in the perspective of integral development (according to Stefan Kunowski's stratified conception), the integration of educational environments (rural and urban), and the implementation of didactic innovations aimed at enhancing the creative activity of students.

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